

CLAIMS

1. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for
5 reducing permeability of a physiological barrier such as the blood-brain barrier.
2. The use as claimed in claim 1, wherein the agent directly or indirectly activates tyrosine protein
10 phosphatase and/or directly or indirectly inhibits tyrosine kinase.
3. The use of an agent which promotes tyrosine protein phosphorylation in the preparation of a medicament for
15 increasing permeability of a physiological barrier such as the blood-brain barrier.
4. The use as claimed in claim 3, wherein the agent directly or indirectly inhibits tyrosine protein
20 phosphatase and/or directly or indirectly activates tyrosine kinase.
5. The use as claimed in any one of claims 1 to 4, wherein the phosphorylation or dephosphorylation
25 promotion effect of the agent is reversible or sufficiently reversible to avoid untoward toxicity problems.
6. The use as claimed in claim 4 or 5, wherein the
30 agent is a vanadium-containing salt.
7. The use as claimed in claim 6, wherein the agent is a pervanadate.
- 35 8. The use as claimed in claim 4, wherein the agent is phenylarsine oxide.

9. The use as claimed in any one of claims 1 to 8, wherein the tyrosine phosphorylation or dephosphorylation involves one or more components of the cadherin/catenin complex.

5

10. The use as claimed in any one of claims 1 to 8, wherein the tyrosine phosphorylation or dephosphorylation involves E-cadherin, N-cadherin, P-cadherin, β -catenin, ZO-1, ZO-2, p100 or p120.

10

11. The use as claimed in claim 9, wherein the tyrosine phosphorylation or dephosphorylation involves β -catenin, ZO-1, ZO-2, p100 or p120.

15

12. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for decreasing brain oedema, such as following stroke or associated with brain tumours.

20

13. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for treating or preventing peripheral oedema, such as high altitude pulmonary oedema.

25

14. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for blocking the entry into the brain of leukocytes that mediate an immune response.

30

15. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for treating multiple sclerosis.

35

16. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for preventing cancer metastasis.

17. The use of an agent which promotes tyrosine protein phosphorylation and the use of a blood-brain barrier- or other physiological barrier-impermeant drug in the preparation of a medicament for delivering the drug to the brain or other part of the body (such as a tumour) the other side of the barrier.

18. The use of an agent which promotes pulmonary epithelial cell tyrosine protein phosphorylation in the preparation of a medicament for treating or preventing accumulation of mucous in the airways.

19. The use of an agent which promotes tyrosine protein dephosphorylation in the preparation of a medicament for treating gastric ulcers.

20. A composition comprising an agent which promotes tyrosine protein phosphorylation and a drug to be delivered across a physiological barrier such as the blood-brain barrier.